

# **Endicott Development Project**

***Public Hearings***

**Anchorage**

**1984**

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PUBLIC HEARING  
FOR THE  
ENDICOTT DEVELOPMENT PROJECT  
MARCH 5, 1984  
7:30 P.M.  
ANCHORAGE, ALASKA

*Accu-Type Depositions, Inc.*

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ATD

PROCEEDINGS

1  
2 LTC SAAGE: Good evening ladies and  
3 gentlemen, I'm Lieutenant Colonel Lee Saage, the Deputy District  
4 Engineer for the Alaska District. Colonel Saling, the District  
5 Engineer, is unable to attend this evening. He had to be out of  
6 town for another meeting, and he does send his apologies. The  
7 Alaska District Corps of Engineers has prepared a draft Environ-  
8 mental Impact Statement on the proposed Endicott Development Project  
9 as a result of an application received from Sohio and Exxon petro-  
10 leum companies for a permit under Section 10 of the Rivers and  
11 Harbors Act and Section 404 of the Clean Water Act. The project is  
12 proposed to recover oil and gas from the Endicott Reservoir located  
13 off the coast of the Sagavanirktok River Delta in the Beaufort Sea.  
14 A representative of those companies will brief you later on their  
15 proposed plan. The EIS will form the basis upon which the permit  
16 decision will be made. The document has attempted to address the  
17 impacts of the applicants' proposed plan. Those alternatives would  
18 also meet the project's purpose as well as the no-project alterna-  
19 tive. Based on the issues raised on the scoping of the EIS, the  
20 impacts of the project may have on social, cultural and subsistence  
21 resources of the North Slope Region are of particular interest and  
22 are evaluated in the EIS. Through this and three other public  
23 meetings, we're attempting to gather the public's views on their  
24 opinions on the adequacy of the EIS. Not only do you have this  
25 opportunity to provide comments but, should you wish, comments can

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1 be provided in writing to my office by March 19th. These comments  
2 will become part of the official record for the EIS. Comments  
3 received will be evaluated and will be formally addressed in the  
4 final Environmental Impact Statement which is scheduled to be  
5 published sometime in May '84. The FEIS will be available for  
6 public comment for a period of 30 days. Final permit decision will  
7 include consideration of all comments received. Possible permit  
8 decisions range from not granting the permit through granting the  
9 permit with or without special conditions for the proposed or any  
10 of the alternatives. There may be refinements in the project  
11 before the FEIS is prepared. We want your comments at this time so  
12 that we can start identifying additional data needed to further  
13 address issues of concern to you. The person on my staff responsible  
14 for coordination and preparation of the EIS is Richard  
15 Gutleber. Rich, why don't you just let them know who you are.

16 (MR. GUTLEBER STANDS UP)

17 Dave Barrows, to my left, and Mary Leykem of the Regulatory Staff  
18 are responsible for processing the permit and processing of the  
19 record of decision. The consulting firm of Environmental Research  
20 and Technology, ERT, is our third-party contractor, and they  
21 prepared and are providing an environmental analysis, which will be  
22 an important part of the final EIS, and also will be preparing  
23 responses to your comments. Mr. David Pritchard of Sohio Alaska  
24 Petroleum Company will explain the proposed Endicott Development  
25 Project. Mr. Robert McDonald of ERT will give a presentation on

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1 the impacts associated with the proposed project and with the alter-  
2 natives. After these informational presentations, we will begin  
3 accepting oral and written statements concerning the adequacy of  
4 the EIS. For accuracy of the record, all important facts and state-  
5 ments should be submitted in writing. If you are not prepared to  
6 submit written comments at this time, comments may be mailed to  
7 Alaska District Office. The address and directions for sending in  
8 comments are available on the transmittal letter, which you should  
9 have found in your chair when you came in. In order to eliminate  
10 any confusion and to consolidate review comments on the EIS in this  
11 hearing, written comments will be accepted prior to the close of  
12 the comment period, again, 19 March this year. At this time I'd  
13 like to introduce Mr. David Pritchard, who will conduct the next  
14 segment of our meeting. Dave, why don't you come on up. After his  
15 10-minute presentation and those comments from Mr. McDonald, I'll  
16 open the movement for testimony. As indicated in the public  
17 announcement, I ask that you please limit your comments to five  
18 minutes. If you expect that your testimony will exceed five  
19 minutes, please summarize the most important points and submit a  
20 written copy of your testimony for the record. And if you do that,  
21 both the oral portion of your testimony and the written formal sub-  
22 mission, will both be included in the record. I ask that if you  
23 have any questions, you direct them to me. Cross-examination of  
24 speakers in attendance is not allowed. I do, however, reserve the  
25 right to ask questions for clarification. Proceedings of the

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1 hearing will be recorded verbatim. . Copies of the transcript n  
2 be purchased from the court reporter, Pam. Mr. Pritchard --

3 OPENING STATEMENT

4 MR. PRITCHARD: Just like to briefly  
5 describe the applicants' proposed project. The purpose of the  
6 project is to develop the Endicott oil and gas reservoir, which our  
7 best guess at the reserves is something over 300 million barrels of  
8 oil. The development is located two to three miles off the Sag  
9 River Delta about 15 miles northeast of Prudhoe Bay in relatively  
10 shallow water. The water depth throughout the project area is less  
11 than 14 feet, and I don't think the area we're looking at the  
12 maximum water depth is about 10 feet, and over much of the area the  
13 water depth is a mere 4 feet. The reservoir underlies State leas- s.  
14 Sohio is a major lease holder and is the operator on behalf of the  
15 other participants in the venture. The other major leaseholders are:  
16 Arco, Amoco, Union, Exxon and the three Native regional corporations:  
17 Cook Inlet, Nana and <sup>Boyer</sup> ~~Boyle~~. The current project status is that pre-  
18 liminary engineering, which was started at about the same time the  
19 DEIS was started, is nearing completion. This will be followed by  
20 preparation of a definitive project cost estimate and also by the  
21 start of detailed engineering. Our current objective is to get  
22 ourselves in a position where we can take the decision on whether  
23 to proceed with the project or not by about fall of this year. In  
24 order to be in the position to take that decision, we will need by  
25 that time to have received all our major permits. We've said before

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1 that we regard this project as economically marginal, and, I guess,  
2 we still see it that way, and at this time it's tough to call  
3 which way the development decision might fall. As you can see, the  
4 engineering has been progressing at the same time as the DEIS has  
5 been moving forward, and as a result of the engineering work, we've  
6 made some design refinements, which I'd like to convey to you this  
7 evening.

8 (TURNS ON SLIDE PROJECTOR)

9 The refinements that have been made  
10 are all within the scope of the project that's addressed of the  
11 DEIS. The overall project scoped is best seen by the general  
12 location map. Starting offshore, we have two gravel islands. The  
13 main production island to the west and the satellite drilling island  
14 to the east. Both of these islands have wells, but the main produc-  
15 tion island, in addition, has the production facilities as well as  
16 such ancillary facilities as accomodation camps. The main production  
17 island also includes a seawater intake, which we would use to draw  
18 water from the Beaufort Sea to water flood the reservoir. The  
19 islands are connected to each other and to the mainland by a series  
20 of causeways. These are gravel causeways. These causeways have  
21 two functions: one is to make the islands accessible year-round by  
22 road, which is excellent from the point of view of operational  
23 reliability. As a spinoff, this would practically eliminate the  
24 need to use helicopters or air cushion vehicles for supporting the  
25 operation of the project. It would also eliminate the use, or

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1 practically eliminate the use of boats during the operation pha  
2 although we would plan on sealifting the modularized production  
3 facilities up by barge directly to the main production islands.  
4 The second function of the causeway is to convey the pipelines  
5 which connect the islands and which connect the processing facili-  
6 ties on the main production islands to the sales points. At the  
7 point where the pipeline and the road come ashore, they follow an  
8 area of relatively high ground between the west fork and the east  
9 fork of the Sagavanirktok River. In this area, the pipeline and  
10 the road are separated by distances of between 50 and 150 feet  
11 until they reach existing Prudhoe Bay Drill Site 9, where the pipe-  
12 line and the road diverge. The road joins up with the existing  
13 Prudhoe Bay unit road network, and the oil pipeline follows exist'ng  
14 Prudhoe Bay unit rights of way to Pump Station Number 1 at the  
15 Trans-Alaska Pipeline System. The Sales Gas Pipeline, which would  
16 be built if and when the Alaska Natural Gas Transportation System  
17 is built, would also follow existing rights of way up to the site  
18 for the future Alaska Gas Conditioning Facility. We would probably  
19 need a new bridge across the Put River at this point because  
20 the existing bridge does not have any additional capacity. You may  
21 recall that previous maps have shown a major construction camp or  
22 MCC occupying a 50 acre site in about this area. About midway  
23 between the landfall and drill site 9. We have since relocated that  
24 MCC to the main production islands, and consequently, we no longer  
25 need that 50 acre pad in that area there. Our requirements in the

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1 Delta are now limited to a site occupying approximately 15 acres  
2 that's marked "Onshore Disposal Pit and Construction Pad." Of that  
3 15 acres, approximately 5 acres would be for a pit for disposing of  
4 drilling mud and cuttings that were contaminated. We would plan on  
5 disposing of the majority of the mud and cuttings offshore, but  
6 those that were too contaminated to dispose of offshore or those  
7 that were contaminated at all, we would dispose of in the onshore  
8 pit. The remaining 10 acres of the 15 acres would constitute a  
9 combination of a cold storage pad and a construction support pad.  
10 The gravel for the project would be obtained from pits. We have  
11 a pit known as "Gravel Site 1" which is located just south of the  
12 double S in the word "crossing." We are also about to do some  
13 geotechnical borings to look at two additional pads, one by the  
14 site marked "Onshore Disposal Pit and Construction Pad" and the  
15 the other one approximately two miles northeast of that location.  
16 The geotechnical borings will determine whether these two pits are  
17 feasible as gravel sources. Now that we no longer have the main  
18 construction camp in the Delta area, we see a requirement for a 250-  
19 man camp for gravel operations that would be located within the  
20 confines of one of the gravel pits and would be temporary and would  
21 be removed at the close of gravel operations. When the DEIS was  
22 started we were asked to identify locations for the causeway on the  
23 islands, and at that time we were unable to do so. We still had  
24 some work to do on reservoir definition, bathymetry drilling and so  
25 on, but we did commit to locate the islands and the causeway within

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1 a box in a corridor area. This next slide takes a close-up loo  
2 at the islands and the causeway. You'll notice that they are within  
3 the boxes and the corridor respectively. You'll probably notice  
4 that the causeway now has a curved shape to it, whereas previously  
5 it was a series of straight lines. The reason for the curve con-  
6 figuration is that during the engineering phase we became concerned  
7 that there was a V where the two causeways joined that would act to  
8 focus wave forces. And this concern was eliminated by this gentle  
9 curve configuration. You may also notice that previously the layout  
10 of the main production island had the water flood intake attached  
11 as a kind of <sup>loop</sup> lead, which was connected to the seaward end of the  
12 island by a 475 foot causeway. We now have the seawater intake  
13 actually located on the main production island itself, and just off-  
14 shore from that we show a breakwater to protect the seawater intake  
15 from ice. In this layout number 1, that breakwater would be formed  
16 by reshaping the existing expiration islands, Endeavor Islands.  
17 In layout number 2, which is the next slide and you've got to look  
18 real closely to see the difference between the two, the main pro-  
19 duction island is approximately 1,000 feet to the southeast of the  
20 previous location and has a new breakwater instead of using Endeavor  
21 Island as a breakwater. In the DEIS it said that up to a 100 wells  
22 would be drilled from each island for a total of 200. We've  
23 sharpened our pencil a little bit on that, and we have now identi-  
24 fied a need for only 120 wells, which is approximately a 40 percent  
25 reduction. Taking a closer look at the main production islands and

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1 just quickly running over the configuration of the things that you  
2 see there, north is shown that way. We have the drilling area over  
3 here for 70 of the 120 wells. Next to that is located the process  
4 facilities. These would be unloaded directly from barges which  
5 would dock in this area, and the dredging that is required would be  
6 on this side of the islands. Here's the main construction camp, and  
7 right next to that the base operations camp. The water flood intake  
8 is located on the seaward end of the island, actually in the island  
9 itself, and just offshore from that you see the breakwater, be it  
10 a new breakwater or the reshaped Endeavor Islands. That structure  
11 joining the two is a bridge which we would probably put in so that  
12 we could get access back and forward between the two. In the  
13 center of the island there's what looks like an open space. We  
14 don't have any need to put any facilities there. So, to save gravel  
15 we felt that we might as well just leave it open. It also happens  
16 to be an ideal spot to locate the flare. Moving onto the satellite  
17 drilling islands, this looks pretty much the same configuration as  
18 you've seen before only smaller, and that's because of the reduction  
19 of the number of wells on it, from 100 wells to 50 wells. Finally,  
20 I'd like to just briefly address the project schedule. This was  
21 taken after the DEIS. We've made some footnotes on it for clarifi-  
22 cation. The design work that I mentioned is on the top line, we're  
23 in that right now. If the project proceeds, we would start with  
24 gravel work late this year and that would go on through the summer  
25 of 1986. We do identify a need for a small amount of gravel work

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1 in the summer of 1987, that would be primarily in connection with  
2 the causeway. Module construction taking place in the lower 48 is  
3 the next line, and then the North Slope facility module construction  
4 that would be tying in the modules that had been moved up there.  
5 But the major part of that work will go on between the middle of '87  
6 and the middle of '88 since the majority of the modules would be  
7 sealifted up in 1987. Pipeline construction is shown starting in  
8 late 1986 and going through the summer of 1987, and I'd like to  
9 point out that the period of pipeline construction in the Delta area  
10 does not coincide with gravel work in that area. Finally, we have  
11 drilling which starts pretty much as soon as the islands are  
12 completed, that's in the middle of '86. And the final line is shown  
13 as "Future Increment Design and Construction." That was a line  
14 that found its way onto the schedule. When we started out with this  
15 work, we weren't really sure how many increments we were going to  
16 build this project with. Since then, we've decided to put in pretty  
17 much everything at one time ready for the 1988 start up, and as a  
18 result, the only future increment that we have identified is  
19 installation of the gas pipeline, whose timing would tie in with  
20 the construction of the Alaska Natural Gas Transportation System.  
21 That concludes my presentation.

22 LTC SAAGE: Thank you Dave. At this  
23 time I'd like to ask Bob McDonald to come up, and he will address  
24 the impacts of the proposed alternative as well as describing the  
25 other identified alternatives and their impacts as well. Bob --

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OPENING STATEMENT

MR. MCDONALD: Thank you, Colonel.

What I'm basically going to do as the Colonel indicated is to summarize environmental differences between the major alternatives that we looked at. As you know, NEPA requires full evaluation of all the major alternatives that are analyzed. What we've also done tonight too is to give you a small handout. You may want to browse through this handout as I'm going through my presentation because it does include an overview of the environmental impacts associated with the various project alternatives. What I'd like to do tonight is concentrate on the major alternatives that we looked at in EIS because of the time limitations that we have this evening. For the draft EIS, we looked at three major categories of alternatives. And the first category consisted of different item configurations.

(SLIDE PROJECTOR IS TURNED ON)

I'll just briefly go through these just to make sure everybody is aware of the various alternatives that we looked at. Dave Pritchard has already talked about the proposed action which is, basically, the two-island configuration. The next one that we looked at was the three-island configuration. Here, again, we're looking at a solid-filled causeway extending up from the Delta and then joined by another causeway out from the central production island out to satellite islands. And then the last island configuration that we looked at was a single island, basically, where you would have just one island which would have all

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1 the facilities on the island itself. So, that was the first ma  
2 category of alternatives that we looked at. The second category  
3 that we looked at dealt with different types of causeway alterna-  
4 tives. There we looked at two alternatives. The first was a  
5 breached causeway alternative. We have a diagram of that.  
6 Basically, what you're looking at in a breached causeway alternative  
7 is a breach. We looked at two breaches in a solid-filled causeway.  
8 What this basically was was two 46-foot breaches located primarily  
9 to help facilitate fish passage. And that was the first major  
10 causeway that we looked at. Obviously, the next causeway was that  
11 of no causeway where you would not have any causeway out to the  
12 islands themselves and it would be joined by buried subsea pipe-  
13 lines. In the last category of major alternatives consisted of  
14 no-action alternative itself. Whereby you would have no projects  
15 and would not have any developments with the Endicott Development  
16 Project. We also looked at many component options. These options  
17 consisted of specific types of project components which could be  
18 applied to any alternatives which were analyzed. In the EIS itself  
19 we looked at approximately 25 different component options ranging  
20 from location of construction camps to options for onshore disposal  
21 of mud and drilling cuttings. Table III of the DEIS, in summary,  
22 pretty much lays out all the various types of component options,  
23 but tonight we won't spend too much time addressing those component  
24 options. As far as the comparative summary, five, ten minutes  
25 doesn't allow us a lot of time, but I will try to provide just a

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1 general overview of the major alternatives. And in the document  
2 that you have, we have reproduced the actual summary out of the EIS.  
3 So, you might want to kind of browse along with me as I try to  
4 describe some of the differences of those various alternatives.  
5 What I'm going to do basically tonight is talk about three disci-  
6 plines where there was a difference in the environmental impacts.  
7 Those disciplines that were affected by the major alternatives  
8 consisted of physical and chemical oceanography, risk analysis, and  
9 fish and marine systems. The main reasons these disciplines were  
10 affected was primarily due to the fact that you're looking at  
11 different offshore project features. So, as far as the first one,  
12 physical and chemical oceanography, one of the things that  
13 obviously was concerned was what impact would the construction of  
14 the causeway have on the physical and chemical oceanography  
15 resources in the area. And we basically concluded that the con-  
16 struction of the causeway would change the near shore circulation  
17 and the water quality, including temperatures, salinity <sup>and suspended solids</sup> (INDISCERNIBLE).  
18 And the area that was affected, obviously, would be dependent upon  
19 the various causeway configuration and also on the wind conditions.  
20 What we did is look at a worse case consideration with the proposed  
21 action and a worse case consideration where we looked at all wind  
22 conditions. An area of approximately 15,000 acres would be affected  
23 by the causeway. This would compare with the breached causeway  
24 where you would have some circulation as a result of the breach, but  
25 it was felt like that the breach would not significantly reduce

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1 this area that was affected that greatly. And then as far as t  
2 no causeway, obviously, if you have no causeway, the existing  
3 physical and chemical oceanographic conditions would not be changed  
4 any if you had a no causeway. As far as risk analysis is concerned,  
5 two observations I would like to make. As far as the probability of  
6 an oil spill or rupture, we found out the probability is basically  
7 the same for all the alternatives. And based on the historic  
8 statistics that we looked at, we concluded that it would be approx-  
9 imately six to 14 oil spills in any given year, but the spills would  
10 be less than 100 barrels. The second major point on risk analysis  
11 is that of trajectory. What would happen to an oil spill if you  
12 had an oil spill? Where would it go? Would it hit the coastal  
13 area? Would it hit Howe Island, or what would it do to the boulder  
14 patch? Some of the basic conclusions that we came up with was that  
15 the risk of an environmental impact on the coastal area is about  
16 two times greater with a no-causeway alternative than with the  
17 proposed action. The risk of an environmental impact on Howe  
18 Island was about five times greater with a no-causeway alternative  
19 than the the proposed action, and then the risk of an oil spill  
20 traversing the boulder patch, is equivalent under all the alter-  
21 natives. Basically, one of the summaries that you can make with  
22 risk analysis is that the causeway in itself under certain wind  
23 conditions, would help to restrict the movement of an oil spill.  
24 As far as the fish and marine systems, I'd like to make three obser-  
25 vations. The construction of the island and the causeway,

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1 obviously, would impact the ocean bottom, and with the proposed  
2 action you would remove, approximately, about 290 acres of fish and  
3 benthic habitat as compared to about 100 acres for the no-causeway  
4 alternative, because with the no-causeway alternative, you still  
5 would have the islands that would have to be constructed and you  
6 would have some dredging associated with the subsea pipeline. The  
7 causeway, as we indicated earlier in our discussion on water  
8 quality, would change the temperature, salinity and the currents.  
9 But our study results basically indicated that the causeway would  
10 not greatly alter the distribution of the major migratory fisheries  
11 population. However, if fish movement would be affected by con-  
12 struction of a causeway, the breached causeway alternative would  
13 help facilitate the passage of fish movement. The no-action alter-  
14 native, obviously, would eliminate any potential alternation of fish  
15 movement or habitat utilization patterns in the area. The third  
16 major area of concern that was brought forward in the scoping  
17 sessions and we spent a lot of time on, dealt with what would be the  
18 effects of the disposal of drilling muds and cuttings. We did a  
19 lot of analysis, but I'd like to try to summarize some of the  
20 pertinent ones. As far as the boulder patch, and that was an area  
21 that a lot of people were concerned about as far as the sensitivity  
22 of the boulder patch, what we concluded was that the magnitude and  
23 deposition ~~of~~ the boulder patch would vary with each of the alter-  
24 natives. And for the proposed action we would be looking at  
25 approximately 390 acres, or two-hundredths of a percent of the

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1 boulder patch would receive more than .01 millimeters of deposi  
2 The no causeway would affect, approximately, 1400 acres of the  
3 boulder patch. Again, I want to reemphasize what this .01 milli-  
4 meter represents. That represents far less than the natural  
5 deposition that is occurring in the project area at this point in  
6 time. The proposed action would also have numerous impacts on all  
7 the remaining disciplines that I have not talked about, but,  
8 basically, what we've concluded was that the impacts would be  
9 similar for all the alternatives, for those disciplines. So, I'm  
10 not going to go into detail for those same things. Those are  
11 listed in the EIS and in the summary. What we want to do is talk  
12 a little bit about one of the major component options which received  
13 a lot of attention in the EIS.

14 (WEST DOCK PIPELINE ROUTE SLIDE IS PUT UP)

15 This was a component option to the  
16 Sag Delta Pipeline Route, and, basically, what would happen here is  
17 that you would have a subsea pipeline going from your production  
18 islands over to West Dock. This would be a 17-mile subsea pipeline.  
19 You still would have the access road in the Delta. It follows the  
20 corridor in here. What this would do would be to primarily disrupt  
21 the bottom habitat in an area of about 17 miles long and could  
22 possibly increase the risk of a pipeline failure associated with  
23 that particular alternative. Like I mentioned earlier, the onshore  
24 construction is still, basically, following the same route in the  
25 Sag Delta. The onshore construction over here in the West Dock

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1 area would follow existing routes, so, you would not have a lot of  
2 disturbance of the habitat in that particular area or impede  
3 caribou traffic to a certain extent. In summary, I'd like to  
4 basically explain how we approached the alternatives, as far as  
5 treating the alternatives in the EIS. In Chapter 4 we present  
6 detailed analysis for the proposed action, and then what we did is  
7 we followed that detailed analysis of the proposed action with the  
8 analysis of each of the alternatives. When the impact of the subse-  
9 quent alternative was the same as the proposed action, we did not  
10 repeat that. We just, basically, refer back to the proposed action.  
11 We did that primarily to save text and try to keep the document  
12 down in size. Table 411 of the EIS summarized that relationship  
13 and provides a guide as to how we tried to treat those various  
14 alternatives. Colonel, that's basically a summary of the major  
15 environmental impacts associated with the alternatives that we  
16 looked at.

17 LTC SAAGE: Thank you, Bob. At this  
18 time we're going to take about a 10-minute break while I get the  
19 cards organized and sorted out, and then we'll begin taking testi-  
20 mony. So, I'd ask that anyone who has filled out a card, please,  
21 if you just sort of bring it up and set it on the table. Thank you.

22 (OFF RECORD)

23 (ON RECORD)

24 LTC SAAGE: The person who indicates  
25 on the card that he wished to speak, that's Mr. Fred Wagner from

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1 Sohio. So, after he completes his testimony, I'll give you one  
2 chance if anyone out there decides they wish to enter anything in  
3 the record. Mr. Wagner --

4 MR. WAGNER: Thank you.

5 LTC SAAGE: Start off by stating your  
6 name and your affiliation, please.

7 TESTIMONY BY

8 FRED WAGNER

9 MR. WAGNER: My name is Fred Wagner  
10 and I work for Sohio Alaska Petroleum Company, and I'm here tonight  
11 representing Sohio Alaska Petroleum Company and the other Endicott  
12 lease owners. We appreciate the opportunity to comment on the draft  
13 Environmental Impact Statement for proposed Endicott development  
14 It is our intention to submit written comments on the DEIS prior  
15 to the close of the comment period of March 19, 1984. The intention  
16 of this presentation is to discuss some of Sohio's key concerns.  
17 In general, we believe the DEIS is a good document. It supports our  
18 contention that the proposed alternative can be executed without  
19 significant impact to the environment. We are concerned that the  
20 summary of the DEIS alleges that the analysis of the proposed  
21 action is subject to a greater degree of uncertainty than the  
22 analysis of the alternatives. This allegation is unsubstantiated  
23 and not supported by the text; as such it must be taken as a subjective  
24 opinion rather than as a statement of fact. Many agencies have  
25 asked us for cost data on the project and its alternatives. This

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1 is so the responsible agencies can get an idea of the additional  
2 cost burdens that might be imposed on the project if alternatives  
3 were to be adopted that are perceived to have less environmental  
4 impact than the preferred case. We shall be submitting such cost  
5 data with our DEIS comments and have already made such cost data  
6 available to a large number of the agencies. You will find that  
7 the additional costs of the various alternatives are large in  
8 absolute terms, each being multimillion dollar incremental propo-  
9 sitions. We would caution against coming to the conclusion that the  
10 additional costs are small in comparison to the total project cost  
11 of about \$2 billion. Again, it should be remembered that the  
12 project is regarded as economically marginal, and project costs  
13 will be a major factor behind the applicants' development decision.  
14 One alternative that is addressed in the DEIS is the possibility of  
15 seasonal drilling restrictions. Frankly, it is difficult to imagine  
16 that this development project would be feasible with this type of  
17 restriction. We recognize that one of the more controversial  
18 aspects of this project is the causeway, and it is suggested that  
19 adverse impacts of the causeway may be mitigated by various degrees  
20 of breaching. We do not see the impacts of a continuous filled  
21 causeway as being significant, and consequently, do not see the  
22 mitigative value of a breach. We certainly do not appreciate the  
23 basis for two breaches, premised on one being active while the other  
24 is being cleaned. Finally, we will be confirming the current design  
25 basis by supplying documentation with our written comments. Again,

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1 Sohio representing the working interest owners for the proposed  
2 Endicott development wish to thank the Corps for this opportunity  
3 to comment.

4 LTC SAAGE: Thank you, Mr. Wagner.  
5 That's the end of my stack of cards. Now, is there anyone else who  
6 would care to speak?

7 (NO ANSWER)

8 LTC SAAGE: Last chance.

9 (NO ANSWER)

10 LTC SAAGE: Mr. Wagner, I thank you  
11 for your input. I'd like to thank everyone for coming out tonight.  
12 I hope we were able to provide some information to you anyway. I'm  
13 assuming all of you who are too shy to speak tonight are planning  
14 to send to us the fruits of your labor and thought between now and  
15 the 19th of March so we have full benefit of your experience and  
16 knowledge in this area. We are actively seeking informed input.  
17 So, if anyone has anything to offer, please do, we're looking for  
18 it. I'd like to thank you very much, again, for coming, and this  
19 concludes the meeting.

20 (OFF RECORD)

21 \* \* \* END OF PROCEEDINGS \* \* \*

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UNITED STATES OF AMERICA )  
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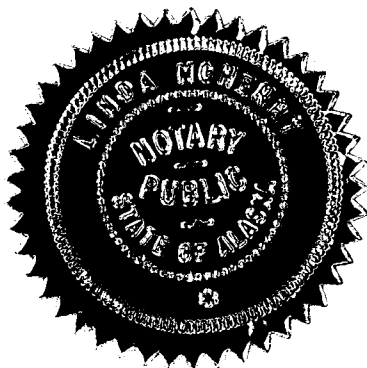
I, Linda McHenry, Notary Public in and for the state of Alaska, residing in Anchorage, Alaska, and Stenograph Court Reporter for Accu-Type Depositions, do hereby certify:

That the annexed and foregoing pages numbered 3 through 22 contain a full, true and correct transcript of proceedings of the public hearing for the Endicott Development Project held at the hour of 7:30 P.M. in Anchorage, Alaska, on the 5th day of March, 1984, as transcribed by me to the best of my knowledge and ability;

That the original transcript has been retained by Accu-Type Depositions for the purpose of filing the same with the Department of the Army, U.S. Army Engineer District, Alaska, Corps of Engineers, Pouch 898, Anchorage, Alaska, as required by law.

I am not a relative, or employee, or attorney, or counsel to any of the parties, nor am I financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this 26th day of March, 1984.



*Linda McHenry*  
LINDA MCHENRY  
NOTARY PUBLIC IN AND FOR ALASKA  
MY COMMISSION EXPIRES 2/28/88

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